Altimeter / Barometer with Weather Forecasts and Clock / Calendar

Model: DA833

User's Manual

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INTRODUCTION

Thank you for your purchase of the Altimeter / Barometer . Designed to be durable, this unit is constructed for rugged outdoor use.

The DA833 has three primary functions.

1. **An Altimeter**
   - Functions related to altitude measurement.
2. **A Barometer and Weather Forecast Device**
   - Functions related to weather forecasts and atmospheric pressure.
3. **Clock, Current Date Calendar, and Count-Up Timer**
   - Functions related to time, date, and time measurement.

An altimeter, the DA833 will measure and display current altitude readings, changes between two elevations, and maximum and minimum altitudes. The unit stores altitude data and can indicate changes in altitude for a 12-hour period or calculates the total accumulation of elevation ascents over a given period of time. In addition, the user can set an altitude alarm that will activate when specified elevations are reached.

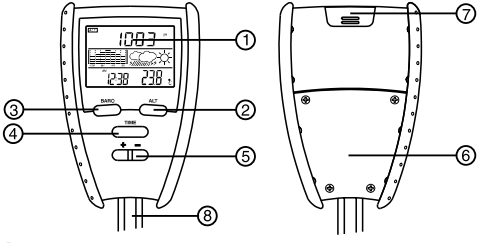
The DA833 is also a barometer. It measures and displays current pressure readings, and provides a barometric history and a bar graph showing barometric changes over a 12-hour period.

A weather forecast device, theDA833 uses barometric information to make forecasts as sunny, slightly cloudy, cloudy, and rainy. It also has a built-in thermometer.

As a timepiece, this unit functions as a clock / calendar, daily alarm, and count-up timer.

To optimize the usefulness of this device, be sure to read this instruction manual carefully before use, and keep it handy for future reference.

DESCRIPTION OF PARTS



① **Liquid Crystal Display (LCD)**
- Large easy-to-read 3-line LCD

② **[ALT]** Altimeter Button
- Alternates between Altimeter displays

③ **[BARO]** Barometer Button
- Alternates between Barometric displays

④ **TIME** Button

- Alternates between Time displays

⑤ **[+ -]** Button

- Changes the value of a setting
- Clears memories
- Activates / deactivates alarm
- Selects units of measure
- Switches from fast to slow sampling rate

⑥ **Battery Compartment**

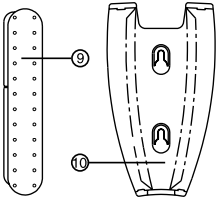
- Houses 2 (two) CR-2032 batteries
- **RESET** Button

⑦ **Sensor Vents**

- Openings for atmospheric sensitive sensors

⑧ **Neck Cord**

- Facilitates carrying around the neck or attached to a rucksack or belt



⑨ **Hand Grips**

- Rubberized grips that prevent the unit from being accidentally dropped

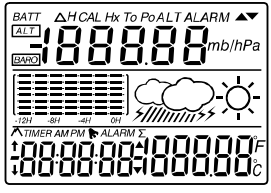
⑩ **Wall-Mount Bracket**

- to mount unit to wall or vertical surfice

INSTALLING AND REPLACING OF BATTERY

The DA833 operates with 2 (two) CR-2032 Lithium batteries that are included with all new units. During initial packaging, the batteries were insulated with a red tape so as to maximize the shelf life of the product. Before use, remove the insulation tape by gently pulling.

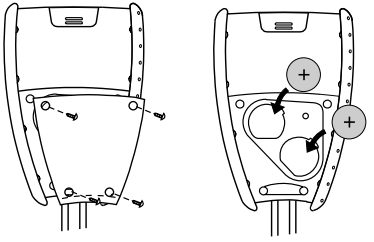
Upon removal, the display will show a full-segment display for 3 seconds; it will then enter the Normal Altitude Display.



FULL SEGMENT DISPLAY

Follow these steps to install or replace batteries:

1. Open battery cover located at the back of the unit by removing screws.
2. Insert 2 (two) new CR-2032 Lithium batteries.



3. Replace the battery cover.

A battery-low indicate [BATT] will show on the display when the batteries require changing.

It is recommended that when the user is stationary at one elevation, that the unit is placed in Barometer Mode. The Altimeter Mode may shorten battery life. Stored altitude related data is not affected by having the unit in Barometer Mode for extended periods of time.

Note: Disposed of improperly, batteries can be harmful. Protect the environment by taking exhausted batteries to authorized disposal stations.

GENERAL OPERATION OF THE ALTIMETER

In Altimeter Mode, by detecting changes in air pressure, the DA833 determines a given altitude level. Subsequently, the unit can be set to show changes in altitude and maximum / minimum elevations. It can store altitude-related data and display elevation trends over a 12-hour period of time. The unit can also display the net total of accumulative ascents.

A small [ALT] icon indicates that the unit is in Altimeter Mode and that the displays are altitude related.

To view display sequences in Altimeter Mode:

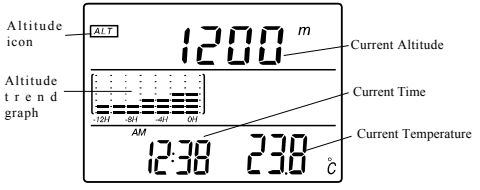
1. Press [ALT] to move between various Altimeter Mode displays.

Normal Altitude Display

The first display in Altimeter Mode.

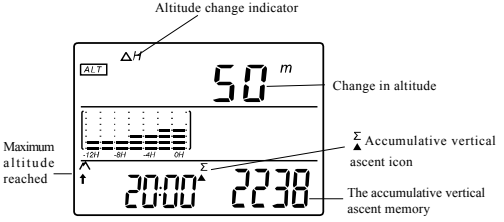
Note: If the unit is being used for the first time, it will automatically enter the Normal Altimeter Display.

Display shows:



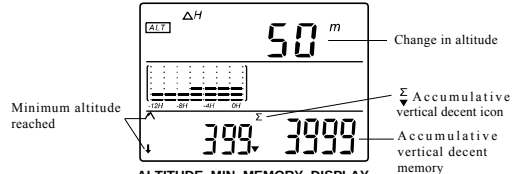
NORMAL ALTITUDE DISPLAY

2. Press [ALT] to view the **Altitude Max Memory Display.**
   Display shows:



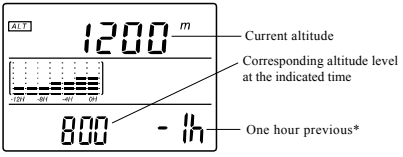
ALTITUDE MAX MEMORY DISPLAY

3. Press [ALT] again, to view the **Altitude Min Memory Display.**
   Display shows:



ALTITUDE MIN MEMORY DISPLAY

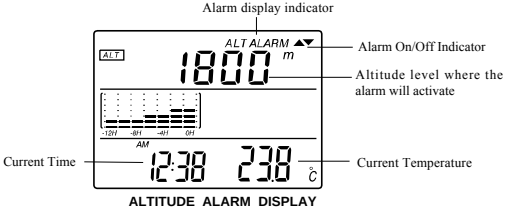
4. Press [ALT] again, **Altitude History Display.**
   Display show:



ALTITUDE HISTORY DISPLAY

* Previous altitude levels can be displayed for up to 12-hours. Press [+] or [-] to display previous altitude levels at one-hour intervals for the past 12-hours.

5. Press [ALT] again to view the **Altitude Alarm Display.**
   Display shows:



ALTITUDE ALARM DISPLAY

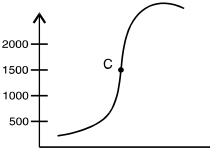
6. Press [ALT] again, the unit will return to the Normal Altitude display.

Altitude Calibration

If the altitude on the display is different from the actual current altitude, the unit can be manually calibrated to reflect the true altitude level.

To calibrate the altitude:

1. In Normal Altitude Display.
2. Press and hold [ALT] and [TIME] simultaneously for about 2 seconds. The CAL Hx indicator shows on the display and the current altitude digits start flashing.
3. Press [+] or [-] to adjust the altitude reading by 1 m. For rapid acceleration of measurement adjustments, press and hold.
4. Press [ALT] to confirm and return to the Altitude Display.



Example:

Point C: A point where the altitude, as indicated by a marking stone or post, is 1500 m. At this point set the current altitude to 1500 m.

Note: The unit will return to Normal Altimeter Display if no buttons are pressed for one-minute during the calibration sequence.

Units of Measurement for Altitude

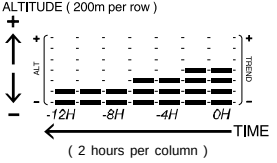
Altitude measurements can be displayed in feet (ft) or meters (m).

To change the altitude units of measure:

1. In Normal Altitude Display.
2. Simultaneously, press and hold the [+] and [-] to select between meters or feet.

About The Altitude Change Graph

In Normal Altitude Display, the DA833 graphically display altitude levels at 2-hour time intervals for the past 12 hours. Each vertical bar on the altitude graph represents a 2-hour time period. Each horizontal line represents pressure changes equal to + /- 200-meters.



The Altitude Change Graph is viewed in all the Altimeter Mode displays.

Altitude History Display

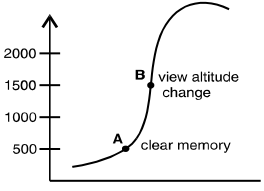
In addition to having altitude information displayed as a graph, altitude history can also be displayed numerically.

To numerically display previous altitude levels:

1. Enter the Altitude History Display
2. Press [+] or [-] to display the corresponding altitude history for a specified time period up to –12 hours.

About Altitude Change Memory

The DA833 can monitors the change in altitude between two points. The unit displays the net vertical difference between points of a descent / ascent. Upon clearing the altitude memory, the current altitude reading is used as a base from which the unit starts recording changes.



Point A: At this point, reset the Altitude Change Memory to 0 m. / ft. The DA833 will immediately start recording new changes in altitude.

Point B: At this point, check the Altitude Change Memory. The unit will display the net vertical difference between point A and point B.

Clearing Altitude Memory, Max / Min Altitude Memory, and Vertical Ascent / Decent Memory

Altitude related memories are cleared sequentially. During the sequence, correct information can be bypassed by pressing [ALT].

> Note: To clear the maximum altitude reached memory, first enter MAX Altitude Display. Alternately, enter MIN Altitude Display to clear the minimum altitude reached memory.

To clear Altitude Mode Memories:

1. Enter Altitude Max (or Altitude Min) Display.
2. Press and hold [ALT] for about 2 seconds, the change-in-altitude digit flash.

   > Note: To bypass any section without making changes to the memory, press [ALT].

3. Press [+] or [-], the change-in-altitude digits will reset to 0 m./ft.
4. Press [ALT], and proceed to the maximum (orminimum)

height reached memory. The subsequent maximum (or minimum) altitude digits flash.

5. Press [+] or [-], the memory resets to the current actual altitude.
6. Press [ALT], and proceed to the accumulative vertical ascent / decent memory. The subsequent accumulative vertical ascent / decent digits flash.
7. Press [+] or [-], the vertical ascent / decent memory resets to 0 m. / ft.
8. Press [ALT] a last time and the unit returns to the Altitude Max (or Min) Memory Display.

Note: The DA833 will return to Altitude Max/Min Memory Display if no buttons are pressed for 1 minute.

The Altitude Alarm

The Altitude Alarm can be set to activate when a specific altitude is reached.

To set the altitude alarm:

1. Enter Altitude Alarm Display.
2. Press and hold [ALT] for above 2 seconds. The ▲ ▼ indicator will display.
3. Press the [+] and [-] to increase / decrease the altitude reading. Press and hold for 100 m acceleration of increments.
4. Press [ALT]
5. Press [+] or [-] to deactivate the alarm (the ▲ ▼ indicator disappears) or [+] or [-] to activate the alarm (▲ ▼ indicator appears).
6. Press [ALT], the ***ALTALARM*** indicator stops flashing. The ▲ ▼ indicator will appear and the alarm will activate at the specified elevation.
7. Press [ALT] again and the Altimeter exits the setting sequence. If the alarm is set to activate at a specified altitude, the ▲ ▼ will be displayed.

Note: The unit will return to the Altimeter Display if no buttons are pressed for 2 minutes.

The altitude alarm setting ranges is between –500m and 7000m.

Altitude Sampling Rate

The DA833 automatically samples altitude level at a rate of 2 seconds or 15 minutes.

When detecting a significant change in altitude, the unit will automatically increase the Altitude Sampling Rate to 2-second intervals.

When maintained at the same elevation for 10 minutes or longer, the device will automatically decrease the rate at which altitude samples are taken.

To manually force a change in the frequency at which altitude samples are taken:

1. In Normal Altimeter Display.

2. Press and hold (+) for about 2 seconds. The Altitude Sampling Rate will increase to 2-second intervals.
3. Press and hold (-) for about 2 seconds. The Altitude Sampling Rate will decrease to 15-minute intervals.

Notes On The Altimeter Functions

Altitude readings may be affected by air pressure change. Sudden changes in pressure, temperature and weather may cause an inaccurate altitude reading.

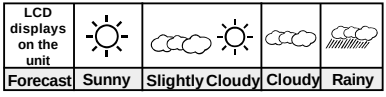
The unit cannot distinguish between change of air pressure caused by a weather change or by an altitude change. However, accurate functioning of the unit can be maintained by following a few simple steps.

To ensure that accurate altitude readings are maintained:

- At the start of a journey, switch the unit to the Altimeter Display Mode. The last barometric pressure will remain stored until the unit is switched back to the Barometer Display Mode.
- When a journey is completed, or if the unit is maintained at the same altitude for extended periods, it is recommended to switch to the Barometer Display Mode.
- If a journey is particularly long or extended over a long distance of varying altitudes, occasionally compare the unit's displayed altitude against known actual altitudes. If necessary, manually calibrate the altitude to maintain correct altitude readings.

GENERAL OPERATION OF THE BAROMETER AND WEATHER FORECAST FUNCTIONS

In Barometric Mode, by detecting changes in air pressure, this unit makes weather predictions. Illustrated weather forecasts symbols indicate forecasts as sunny, slightly cloudy, cloudy, and rainy.



Displayed forecast symbols are intended indicate weather forecasts for the coming 12 to 24 hours. The radius of the forecast is approximately 30 to 50 km.

A small BARO icon indicates that the unit is in Barometric Mode and that the displays are barometer related.

Note:

1. The accuracy of weather forecasts, when only using atmospheric pressure trends, are approximately 70 to 75 percent.
2. The weather forecasts from this unit are predictions that cover the next 12 to 24 hours. It may not necessarily reflect the current situation.
3. The "Sunny" icon, as applies to nighttime, implies clear weather.

To View Different Displays in Barometric Mode:

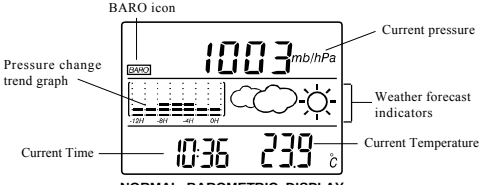
1. Press [BARO] to move between barometric functions.

   Normal Barometric Display

   The first display in Barometric Display Mode.

   Note: The unit will automatically enter Normal Barometric Display when first entering the Barometric Mode.

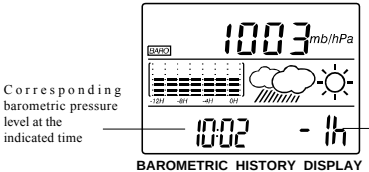
   Display shows:



NORMAL BAROMETRIC DISPLAY

2. Press [BARO] again to view th**Barometric Pressure History Display**

   Display shows:



BAROMETRIC HISTORY DISPLAY

   * Previous barometric levels can be displayed for up to 12 hours. Press [+} or [-] to display previous barometric levels at one hour intervals for the past 12 hours.

3. Press [BARO] again, to return to the**Normal Barometer Display.**

Barometric Calibrations

At sea level or near a reliable source like a weather station, the barometer can be calibrated.

To calibrate the barometric function:

1. Enter the Normal Barometric Display .
2. Simultaneously press and hold [BARO] and [TIME] for about 2 seconds. The “CAL Po” will be displayed and the current barometric digits will flash.
3. Press [+] or [-] to adjust barometric readings.
4. Press [BARO] to return to the Barometric Display Mode.

Units of Measure for Barometric Pressure

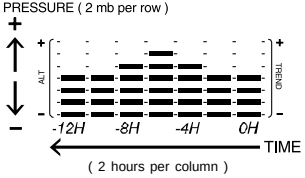
Barometric units of measurement can be displayed as mb, hpa, and inHg.

To change the units of measurement:

1. Enter Normal Barometric Display.
2. Simultaneously press and hold [+] and [-] for about 2 seconds.
3. Simultaneously press again until the desired units have been selected.

About The Pressure Change Graph

The DA833 can display barometric pressure levels at intervals for the past 12 hours. Each vertical bar on the Pressure Change Graph represents a 2-hour time period. Each horizontal line represents pressure change equal to + / - 2 mb/hPa.



An upward or downward direction of the vertical bars may illustrate a changing pressure trend. Subsequently, this may indicate changes in weather conditions. However, as stated previously, caution needs to be taken when attempting to predict weather forecasts.

Pressure History Display

Barometric pressure readings can also be displayed numerically.

To numerically display previous barometric pressure levels:

1. Enter the Barometric History Display
2. Press [+] or [-] to display the corresponding barometric pressure for the specified time period.

Notes On The Barometer Functions

Barometer readings may be affected by a change in altitude.

The unit cannot distinguish between a change in air pressure caused by weather patterns or by a change in altitude. However, accurate functioning of the unit can be maintained by following a few simple steps.

To ensure that accurate barometric readings are maintained:

When the unit is stationed at the same elevation for extended periods, it is advised to keep theunit in Barometer Mode.

In addition to maximizing the weather forecasting capabilities the unit requires less power to function. Subsequently battery life may be extended.

GENERAL OPERATION OF THE TIME AND DATE FUNCTIONS

The DA833 has a Time and Date Mode. This mode also includes a count-up timer and daily wakeup alarm.

The Time and Date Mode only affects the third line of the LCD.

To View Different Time and Date Mode displays:

1. Enter Normal Altimeter Display or Normal Barometer Display to view current time.

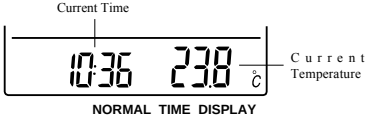
Normal Time Display

The first display in Time and Date Mode.

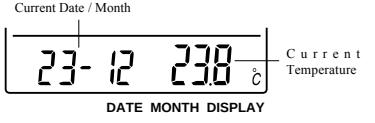
Note:

- Normal Time Display is the third line of either the Normal Altitude Display or Normal Barometer Display.
- Only the third line of the LCD will change in Time Date Mode.

Display shows:



2. Press [TIME] to view the **Current Date / Month Display.**
   Display shows:



3. Press [TIME] again to view the **Alarm Time Display**
   Display shows:

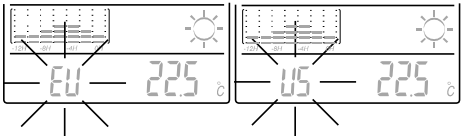
4. Press [TIME] again to view the **Timer Display**
   Display shows:

The Time and Date

The current time and date can be set sequentially.

To Set the Current Date and Time:

1. Enter Normal Altitude Display or Normal Barometer Display.
2. Press and hold [TIME] for 2 seconds, the EU or US indicator starts flashing.



3. Press [+] or [-] to select US for US format shown as month / date or EU for European format shown as date / month.
4. Press [TIME] again, the current month flashes.
5. Press [+] or [-] to increase / decrease the month digits. For rapid acceleration of the digits, press and hold.
6. Press [TIME] again, the current date flashes.
7. Press [+] or [-] to increase / decrease the date digit.
8. Press [TIME] again, the 12-hour or 24-hour indicator starts flashing.
9. Press [+] or [-] to select between 12-hour or 24-hour time format.
10. Press [TIME] again, the hour digit starts flashing.
11. Press [+] or [-] to increase / decrease the hour digit.
12. Press [TIME] again, minute digits start flashing.
13. Press [+] or [-] to increase / decrease the minute digits.
14. Pressing [TIME] a last time to exit.

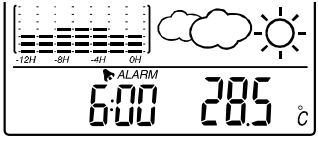
Note: The unit will return to Normal Barometer Display or Altitude Display if no buttons are pressed for 1 minutes during setting sequence.

The Daily Alarm

The DA833 has a daily alarm that can be programmed to activate at the same time each day.

To Set the Alarm Time:

1. Enter Alarm Time Display
2. Press and hold [TIME] for 2 seconds, the [ ] icon will be displayed and the [ALARM] indicator and the hour digits start flashing.



3. Press [+] or [-] to increase / decrease the hour digits.
4. Press [TIME] again, the minute digits flash.
5. Press [+] or [-] to increase / decrease the minute digit.
6. Press [TIME] again to set and activate / deactivated the alarm.
7. Press [+] or [-] to select between and Activate. The alarm icon will only appear when the alarm is set.
8. Pressing [TIME] a last time to exit. The ALARM indicator stops flashing.

Note: If no buttons are pressed for 2 minutes during setting sequence, the unit will return to Alarm Time Display.

Deactivating The Alarm

When the alarm time is reached the alarm will sound for 1 minute.

To stop the alarm:

Pressing any button can stop the alarm sound.

The Count-Up Timer

The unit comes with a count-up timer and can count up to 99 hours 59 minutes and 59 seconds.

To start, stop, and reset the timer:

1. Enter Timer Display.
2. Press [+] the timer starts counting.
3. Press [+] again, the timer stops. To start the timer again without clearing the elapsed time, press [+].
4. To reset the timer to 0, press [+] to stop the timer and then press [-].

Temperature Display

The current temperature is displayed in all three display modes. The temperature can be displayed as Celsius (°C) and Fahrenheit (°F).

To select the units of measure for the temperature display:

1. Enter Date/Month Mode.
2. Press and hold [+] or [-] for about 2 seconds to change the units of measure.

RESETTING THE UNIT

Located inside the battery compartment is a RESET Button. Using a blunt object such as a paper clip, press RESET to return all settings to the factory values.

The button is required only when the unit is not operating in a favorable way, such as in the rare case of a malfunction.

Note: After resetting the unit all memories and data will be cleared.

MAINTENANCE

When handled properly, this unit is engineered to give you years of satisfactory service. Here are a few product care instructions:

1. Do not immerse the unit in water. If the unit comes in contact with water, dry it immediately with a soft lint-free cloth.
2. Do not clean the unit with abrasive or corrosive materials. Abrasive cleaning agents may scratch the plastic parts and corrode the electronic circuit.
3. Do not subject the unit to excessive: force, shock, dust, temperature, or humidity. Such treatment may result in malfunction, a shorter electronic life span, damaged batteries, or distorted parts.
4. Do not tamper with the unit's internal components. Doing so will terminate the unit's warranty and may cause damage. The unit contains no user-serviceable parts.
5. Only use new batteries as specified in this instruction manual. Do not mix new and old batteries as the old batteries may leak.

SPECIFICATIONS

Operating Temperature Range	: -10°C to 60°C (-14°F to 140°F)

Altimeter Functions

Range	: -500 m to +7000 m
Resolution	: 1 m / 1 ft
Sampling rate	: 2 sec (normal mode)15min (sleep mode: same level for more than 15 min.)
Range	: 60,957 m / 1 99,999 f t
Units of measure	: m or ft

Barometer Functions

Range	: 400 mb/hPa to 1070 mb/hPa
Resolution	: 1mb/hPa (0.03inHg)
Sampling rate	: 15 minutes
Units of measure	: mb/hpa or inHg

Thermometer Functions

Range	: -40°C to 70°C (-40°F to 158°F)

Resolution : 0.1°C (0.2°F)

Sampling rate : 10 seconds

Units of measure : °C or °F

Calendar Clock Functions

Calendar : Date/month (European format) or month/Date (US format)

Clock time : 12-hour AM /PM format or 24-hours format

Time resolution : 1 second

Timer Functions

Range : counts up to 99 hours, 59 minutes, 59 seconds

Resolution : 1 second

CAUTION

- The content of this manual is subject to change without further notice.
- Due to printing limitation, the displays shown in this manual may differ from the actual displays.
- The manufacturer and its supplies holds no responsibilitis to you or any other person for any damages expenses, lost profits, or any other damages arise by using this Altimeter.
- The contents of this manual may not be reproduced without the permission of the manufacturer.